

Appl. No. 10/707,237
Amdt. Dated Sep. 14, 2005
Reply to Office Action of June 14, 2005

Amendments to the Specification

Please replace paragraph [0004] with the following amended paragraph:

[0004] The light emitted from the light source 124 consists of p-polarized and s-polarized light lights. In operation, the light is transported by light guide plate 122 into the polarizer 19. The polarizer 19 allows only one kind of p-polarized light polarized along an optical axis thereof to pass therethrough. Generally, at least 50% of the light is lost at the polarizer 19. The p-polarized light passes through the TFT substrate 14, liquid molecules 18 and the color filter substrate 16 in turn, with the result that no more than 20% of the light emitted from the light source 124 is used. That is, the efficiency of use of the light source 124 is no more than 20%.

Please replace paragraph [0018] with the following amended paragraph:

[0018] Referring to FIG. 2, a liquid crystal display 30 using the polarized light source 20 comprises a liquid crystal panel 31 stationed adjacent to the downward prism plate 28 of the light guide plate 20. The liquid crystal panel 31 comprises a TFT substrate 32, a color filter substrate 33, liquid crystal molecules 34 between the substrates 32, 33, and polarizers 35[[]], 35' having 35' having optical axes perpendicular to each other, the polarizers 35, 35' being respectively attached on outer surfaces (not labeled) of the substrates 32, 33.

Please replace paragraph [0019] with the following amended paragraph:

[0019] Referring to FIG. 3, when light passes from a medium with refractive index n_0 into another medium with refractive index n_1 , reflective and refractive phenomenon occur at the interface of the media. Supposing an incident angle θ_0 , a refractive ~~angle θ_0~~ , angle θ_1 , a refractive index of

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an incident medium n_0 , a refractive index of n_1 an emitting medium n_1 , a p-polarized light energy rate of reflected light R_p , and an s-polarized light energy rate of reflected light R_s , then R_p and R_s can be described as follows:

$$R_p = \{n_1/\cos \theta_0 - n_0/\cos \theta_1\}^2 / \{n_1/\cos \theta_0 + n_0/\cos \theta_1\}^2$$

$$R_s = \{n_0/\cos \theta_0 - n_1/\cos \theta_1\}^2 / \{n_0/\cos \theta_0 + n_1/\cos \theta_1\}^2$$

As seen from these formulas, with an increase in the incident angle θ_0 , R_s increases gradually. However, R_p decreases to zero at a specific angle θ_B which is called Brewster's angle. θ_B can be expressed as follows:

$$\theta_B = \tan^{-1} n_0/n_1$$

When the incident angle of the light is at a Brewster's angle θ_B , the reflected light is entirely s-polarized light, and the refractive light will be combined with nearly 92% p-polarized light and 8% s-polarized light.